

Form PTO-1449 (modified)		Atty. Docket No.: 11762.0284.CNUS01	Serial No.: 09/923,058
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicants: David S. Becker, et al.	
		Filing Date: August 6, 2001	Group: 1763
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Pages 1-2</i>	Other Art <i>See Pages 2-3</i>	

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
<i>GRY</i>	A1	4,283,249	08/11/1981	Ephrath, L.M.	156	643	08/17/1979
<i>GRY</i>	A2	4,352,724	10/5/1982	Sugishima, et al.	204	192	11/19/1980
	A3	4,371,407	02/01/1983	Kurosawa, K.	148	187	10/28/1981
	A4	4,461,672	07/24/1984	Musser, M.E.	156	644	11/18/1982
	A5	4,522,681	06/11/1985	Gorowitz, et al.	156	643	04/23/1984
	A6	4,952,274	08/28/1990	Abraham, T.	156	643	05/27/1988
	A7	4,966,870	10/30/1990	Barber, et al.	437	228	08/08/1989
	A8	5,176,790	01/05/1993	Arleo, et al.	156	643	09/25/1991
	A9	5,200,358	04/06/1993	Bollinger, et al.	437	180	11/15/1991
	A10	5,244,837	09/14/1993	Dennison, C.H.	437	195	03/19/1993
	A11	5,290,726	03/01/1994	Kim, H.S.	437	52	02/18/1992
	A12	5,298,463	03/29/1994	Sandhu, et al.	437	192	04/16/1992
	A13	5,302,236	04/12/1994	Tahara, et al.	156	643	10/18/1991
	A14	5,321,211	06/14/1994	Haslam, et al.	174	262	04/30/1992
	A15	5,338,700	08/16/1994	Dennison, et al.	437	60	04/14/1993
	A16	5,366,590	11/22/1994	Kadomura, S.	156	662	03/17/1994
<i>GRY</i>	A17	5,372,969	12/13/1994	Moslehi, M. M.	437	195	03/03/1992
<i>GRY</i>	A18						

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
<i>GRY</i>	B1	JP58053833	03/30/1983	Japan	156	643	Australia only
<i>GRY</i>	B2	JP60143633	07/29/1985	Japan	156	643	Australia only

EXAMINER: *George Gaudreau* DATE CONSIDERED: *5-031*

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

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Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
<i>GJG</i>	B3	JP02198634	08/07/1990	Japan	B01J	23/24	Abstract only
	B4	JP03262503	11/22/1991	Japan	B01D	19/00	Abstract only
	B5	JP04180222	06/26/1992	Japan	H01L	21/302	Abstract only
<i>GJG</i>	B6	JP04298032	10/21/1992	Japan	H01L	21/302	Abstract only
	B7						

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
<i>GJG</i>	C1	Vossen, J.L.; Cuomo, J.J., "Glow Discharge Sputter Deposition", in <i>Thin Film Processes</i> , Vossen, J.L.; Kern, W., Eds.; Academic Press, New York: 1978; pp. 11-73.
	C2	Coburn, J.W.; Kay, E., "Some Chemical Aspects of the Fluorocarbon Plasma Etching of Silicon and Its Compounds", <i>IBM J. Res. Develop.</i> 1979, Vol. 23(1); 33-41.
	C3	Toyoda, H.; Komiya, H.; Itakura, H., "Etching Characteristics of SiO ₂ in CHF ₃ Gas Plasma", <i>J. Electronic Mat.</i> 1980, Vol. 9(3); 569-584.
	C4	Flamm, D.L.; Donnelly, V.M., "The Design of Plasma Etchants", <i>Plasma Chemistry and Plasma Processing</i> 1981, Vol. 1(4); 317-363.
	C5	Kusters, K.H.; Sesselmann, W.; Melzner, H.; Friesel, B., "A Self Aligned Contact Process with Improved Surface Planarization", <i>Journal de Physique</i> 1988, Vol. 49, Colloque C4, Suppl. 9; C4503 - C4506.
	C6	Chang, E.Y.; van Hove, J.M.; Pande, K.P., "A Selective Dry-Etch Technique for GaAs MESFET Gate Recessing", <i>IEEE Trans. Electron. Devices</i> 1988, Vol. 35(10); 1580-1584.
	C7	Nojiri, K.; Iguchi, E.; Kawamura, K.; Kadota, K., "Microwave Plasma Etching of Silicon Dioxide for Half-Micron ULSIs", in <i>Extended Abstracts of the 21st Conference on Solid State Devices and Materials</i> , Tokyo, 1989; pp. 153-156.
<i>GJG</i>	C8	Grande, W.J.; Johnson, J.E.; Tang, C.L., "Characterization of Etch Rate and Anisotropy in the Temperature-Controlled Chemically Assisted Ion Beam Etching of GaAs", <i>J. Vac. Sci. Technol. B</i> , 1990, Vol. 8(5); 1075-1079.

EXAMINER: *George Goudreau* DATE CONSIDERED: *5-031*

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INFORMATION DISCLOSURE STATEMENT — PTO-1449 (MODIFIED)

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Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C9	Simko, J.P.; Oehrlein, G.S., "Reactive Ion Etching of Silicon and Silicon Dioxide in CF ₄ Plasmas Containing H ₂ or C ₂ F ₄ Additives", <i>J. Electrochem. Soc.</i> 1991, Vol. 138 (9); 2748-2752.
	C10	Marks, J.; Collins, K.; Yang, C.L.; Groechel, D.; Keswick, P.; Cunningham, C.; Carlson, M., "Introduction of a New High Density Plasma Reactor Concept for High Aspect Ratio Oxide Etching", <i>SPIE Vol. 1803 (1992)</i> ; pp. 235-247.
	C11	Sakai, T.; Hayashi, H.; Abe, J.; Horioka, K.; Okano, H., "Examination of Selective Etching and Etching Damage with Mass-Selected Ion Beam", <i>1993 Dry Process Symposium</i> ; 193-198.
	C12	Preliminary Invalidity Contentions regarding Parent Patent 5,286,344, filed in <i>Sandisk Corp. v. Micron Tech., Inc.</i> , Civ. No. CV02-2627CW (N. D. Cal.).
	C13	Preliminary Invalidity Contentions regarding Parent Patent 6,015,760, filed in <i>Sandisk Corp. v. Micron Tech., Inc.</i> , Civ. No. CV02-2627CW (N. D. Cal.).
	C14	Preliminary Invalidity Contentions regarding Parent Patent 6,287,978, filed in <i>Sandisk Corp. v. Micron Tech., Inc.</i> , Civ. No. CV02-2627CW (N. D. Cal.).
	C15	

EXAMINER: George Goudreau DATE CONSIDERED: 5-03'
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List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant Becker, et. al.	
		Filing Date: August 06, 2001	Group: 1763
U.S. Patent Documents <i>See Pages 1-2</i>	Foreign Patent Documents <i>See Page 2</i>	Other Art <i>See Pages 3-4</i>	

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
<i>Graey</i>	A1	5,772,832	06/30/98	Collins, et al.	156	345	04/04/97
	A2	5,888,414	03/30/99	Collins, et al.	216	68	09/24/97
	A3	6,194,325	02/27/01	Yang, et al.	438	740	12/04/95
	A4	5,880,037	03/09/99	Arleo, P.	438	740	10/09/97
	A5	5,477,975	12/26/95	Rice, et al.	216	68	10/15/93
	A6	5,556,501	09/17/96	Collins, et al.	156	345	04/04/93
	A7	6,184,150	02/06/01	Yang, et al.	438	740	10/27/97
	A8	5,562,801	10/08/96	Nulty, J.E.	156	643.1	12/07/94
	A9	4,350,578	09/21/82	Frieser, et al.	204	192 R	05/11/81
	A10	4,368,092	01/11/83	Steinberg, et al.	156	345	08/05/81
	A11	4,377,438	03/22/83	Moriya, et al.	156	643	09/22/81
	A12	4,401,054	08/30/83	Matsuo, et al.	118	723	04/27/81
	A13	4,492,620	01/08/85	Matsuo, et al.	204	192 R	09/09/83
	A14	4,511,430	04/16/85	Chen, et al.	156	643	01/30/84
	A15	4,675,073	06/23/87	Douglas, M.	156	643	03/07/86
	A16	4,711,698	12/08/87	Douglas, M.	156	643	07/15/85
	A17	4,778,561	10/18/88	Ghanbari, E.	156	643	10/30/87
	A18	4,807,016	02/21/89	Douglas, M.	357	67	11/20/87
	A19	4,918,031	04/17/90	Flamm, et al.	437	225	12/28/88
	A20	4,948,458	08/14/90	Ogle, J.S.	156	643	08/14/89
	A21	5,091,326	02/25/92	Haskell, J.D.	437	43	09/12/90
	A22	5,269,879	12/14/93	Rhoades, et al.	156	643	10/16/91
<i>Graey</i>	A23	5,296,095	03/22/94	Nabeshima, et al.	156	662	10/30/91

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Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
GAG	A24	5,429,710	07/04/95	Akiba, et al.	216	17	02/16/94
	A25	5,468,342	11/21/95	Nulty, et al.	156	643.1	04/28/94
	A26	5,503,901	04/02/96	Sakai, et al.	428	161	06/29/94
GAG	A27	5,880,036	03/09/99	Becker, et al.	438	740	11/15/93
	A28						
	A29						

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1	0520519 A1	12/30/92	EPO			Yes
	B2	55009464	01/23/80	Japan	H01L	27/08	Abstract Only
	B3	0 050 972 A2	05/05/82	EPO	H01L	21/88	Yes
	B4	57210631	12/24/82	Japan	H01L	21/302	Abstract Only
	B5	60111474	06/17/85	Japan	H01L	29/80	Abstract Only
	B6	61-224423	10/06/86	Japan	H01L	21/302	Abstract Only
	B7	0 265 584 A2	04/05/88	EPO	H01L	21/31	Yes
	B8	2 175 542 A	12/03/86	United Kingdom	C23F	1/02	Yes
	B9	2062038	03/01/90	Japan	H01L	21/302	Abstract Only
	B10	0 552 490 A1	07/28/93	EPO	H01L	21/311	Yes
	B11	0 644 584 A1	03/22/95	EPO	H01L	21/311	Yes
	B12						

EXAMINER: George Goudreau DATE CONSIDERED: 9-03-1

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Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	Watanabe, S., "Plasma Cleaning by Use of Hollow-Cathode Discharge in a CHF ₃ -SiO ₂ Dry-Etching System", <i>Japanese J. Appl. Physics</i> 1992, 31; 1491-1498.
	C2	Yasuaki Nagahiro, "Self-Aligned Contact Development Activity Increases Aimed for Large Scale Manufacturing Around 0.25 Mm Era Problem of Etching Technology: Improvement of Si ₃ N ₄ Selectivity Ratio", <i>Nikkei Microdevices</i> , Feb. 1995, pp. 54-61.
	C3	Gottsch, R.A., "Recent Developments in Plasma Processing", AT&T Bell Laboratories, 1994, <i>American Vacuum Society Symposium</i> , p. 120.
	C4	Nulty, J.E.; Trammel, P.S., "Self-Aligned Contact (SAC) Dry Etch Process of 0.5m SRAM Technology", <i>1994 American Vacuum Society Symposium</i> , p. 120.
	C5	"The Correlation Between Selective Oxide Etching and Thermodynamic Prediction", S.C. McNevin, AT&T Bell Laboratories, <i>1994 American Vacuum Society Symposium</i> , p. 120.
	C6	"High Rate and Highly Selective SiO ₂ Etching Employing Inductively Coupled Plasma", Y. Honike; K. Kubota; T. Fukazawa, Tokyo University, <i>1994 American Vacuum Society Symposium</i> , p. 120.
	C7	Yin, G.Z.; Ben-Dor, M.; Chang, M.S.; Yep, T.O. "High-Selectivity Plasma Etching of Silicon Dioxide on Single-Wafer Etchers", <i>Journal of Vacuum Science & Technology A</i> 1989, A7(3); 691-695.
	C8	Bariya, A.J.; Shan, H.; Frank, C.W.; Self, S.A.; McVittie, J.P., "The Etching of CHF ₃ Plasma Polymer in Fluorine-Containing Discharges", <i>Journal of Vacuum Science and Technology B</i> 1991, 9 (1); 1-7.
	C9	Machida, K.; Oikawa, H., "SiO ₂ Planarization Technology with Biasing and Electron Cyclotron Resonance Plasma Deposition for Submicron Interconnections", <i>Journal of Vacuum Science and Technology B</i> 1986, 4; 818-821.
	C10	Anonymous, "Selective Reactive Ion Etch for Silicon Oxide Over Silicon Nitride", <i>Research Disclosure</i> 1989, 301; 340.
	C11	Moss, S.J., et al. Eds. "Plasma Etching", in <i>The Chemistry of the Semiconductor Industry</i> , New York: Blackie & Son Ltd., 1987, pp. 374-378.
	C12	D'Agostino, R., "Summary Abstract: Mechanisms of Polymerization in Discharges of Fluorocarbons", <i>Journal of Vacuum Science and Technology A</i> 1985, 3 (6); 2627-2628.

EXAMINER: *George Goudeau* DATE CONSIDERED: 9-031

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Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C13	Riley, P.E.; Hanson, D.A., "Comparison of Etch Rates of Silicon Nitride, Silicon Dioxide, and Polycrystalline Silicon Upon O ₂ Dilution of CF ₄ Plasmas", <i>Journal of Vacuum Science and Technology B</i> 1989, 7(6); 1352-1356.
	C14	Oehrlein, G.S.; Lee, Y.H., "Reactive Ion Etching Related Si Surface Residues and Subsurface Damage: Their Relationship to Fundamental Etching Mechanisms", <i>Journal of Vacuum Science and Technology A</i> 1987, 5 (4); 1585-1594.
	C15	Gilboa, H.; Hata, W.; O'Donnell, K., "Nondestructive Characterization of RIE Induced Radiation Damage Using Surface Acoustic Waves", <i>Mat. Res. Soc. Symp. Proc.</i> 1985, 38 511-517.
	C16	Truesdale, B.A.; Smolinsky, G.; Mayer, T.M., "The Effect of Added Acetylene on the RF Discharge Chemistry of C ₂ F ₆ , A Mechanistic Model for Fluorocarbon Plasmas", <i>J. Applied Physics</i> 1980, 51(5); 2909-2913.
	C17	Norström, H.; Buchta, R.; Runovc, F.; Wiklund, P., "RIE of SiO ₂ in Doped and Undoped Fluorocarbon Plasmas", <i>Vacuum</i> 1982, 32 (12); 737-745.
	C18	Coburn, J.W., "Increasing the Etch Ratio of SiO ₂ /Si in Fluorocarbon Plasma Etching", <i>IBM Technical Disclosure, Bulletin</i> 1977, 19 (10); 3854.
	C19	Arends, H.T.; DeVries, C.A.M.; van Roosmalen, A.J.; Puylaert, G.C.C., "Mass Spectrometry and Reactive Ion Etching of Silicon Nitride (Si ₃ N ₄), Silicon Dioxide, and Silicon in Freon on Various Electrode Materials", in <i>Symposium Proceedings—International Symposium of Plasma Chemistry</i> , Vol. 3, 7 th Ed.; Eindrose Publishers: 1985; 1007-1012.
	C20	

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Substitute for form 1449A/PTO				Complete If Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	(filed herewith)
(use as many sheets as necessary)				Filing Date	August 6, 2001
				First Named Inventor	Becker et al.
				Group Art Unit	1763
				Examiner Name	George Gordan Rean
Sheet	1	of	5	Attorney Docket Number	11762.0284.CNUS01

U.S. PATENT DOCUMENTS						
Examiner Initials *	Cite No. ¹	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code ² (if known)			
gogr	A1	4,734,157		Carbaugh et al.	03-29-1988	
	A2	4,789,560		Yen	12-08-1988	
	A3	4,877,641		Dory	10-31-1989	
	A4	4,324,611		Vogel et al.	04-13-1982	
	A5	4,912,061		Nasr	03-27-1990	
	A6	4,568,410		Thornquist	02-04-1986	
	A7	3,479,237		Bergh et al.	11-18-1969	
	A8	4,971,655		Stefano et al.	11-20-1990	
	A9	5,013,398		Long et al.	05-07-1991	
	A10	5,040,046		Chhabra et al.	08-13-1991	
	A11	4,244,752		Henderson et al.	01-13-1981	
	A12	4,374,698		Sanders et al.	02-22-1983	
	A13	4,581,101		Senoue et al.	04-08-1986	
	A14	5,043,790		Butler	08-27-1991	
	A15	5,013,692		Ide et al.	05-7-1991	
	A16	4,978,420		Bach	12-18-1990	
	A17	4,180,432		Clark	12-25-1979	
	A18	4,734,152		Geis et al.	03-29-1988	
	A19	5,021,121		Groeschel et al.	06-04-1991	
gogr	A20	4,439,270		Powell et al.	03-27-1984	

FOREIGN PATENT DOCUMENTS								
Examiner Initials *	Cite No. ¹	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ₆
		Office ³	Number ⁴	Kind Code ⁵ (if known)				
	B1	JP	58-53833		Okano	03-30-1998		
	B2	JP	1-15930		Omoto	01-19-1989		
	B3	JP	2-62038		Kadomura	03-01-1990		
	B4	JP	4-298032		Nabeshima	10-21-1992		
	B5	JP	4-180222		Mashiro	06-28-1992		
	B6	EP	661434		Yank et al.	06-03-1995		

Examiner Signature	George Gordan Rean	Date Considered	9-03-1
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ Unique citation designation number. ² See attached Kinds of U.S. Patent Documents. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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PTO/SB/08A (08-00)

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Substitute for form 1449A/PTO

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet

2

9

1

Complete If Known

Application Number	(filed herewith)
Filing Date	August 6, 2001
First Named Inventor	Becker et al.
Group Art Unit	1763
Examiner Name	Goudrean
Attorney Docket Number	11762.0284.CNUS01

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		Number	Kind Code ² (if known)			
GJG	A21	5,376,233		Man	12-27-1994	
	A22	5,338,398		Szwejkowski et al.	8-16-1994	
	A23	5,318,616		Nakamura et al.	05-31-1994	
	A24	5,470,768		Yanai et al.	11-28-1995	
	A25	4,892,753		Wang et al.	01-09-1990	
	A26	4,870,245		Price et al.	09-26-1989	
	A27	5,423,945		Marks et al.	06-13-1995	
	A28	5,242,538		Hamrah et al.	09-07-1993	
	A29	5,451,290		Salfelder	09-19-1995	
	A30	5,556,501		Collins et al.	09-17-1996	
	A31	5,477,975		Rice et al.	12-28-1995	
	A32	5,288,344		Blalock et al.	02-15-1994	
	A33	5,093,277		Arima et al.	03-03-1992	
	A34	4,241,165		Hughes et al.	12-23-1980	
	A35	4,439,270		Powell et al.	03-27-1984	
	A36	5,286,667		Lin et al.	02-15-1994	
GJG	A37	5,364,804		Ho et al.	11-15-1994	
	A38					
	A39					
	A40					

FOREIGN PATENT DOCUMENTS

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George Goudreau

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Considered**

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Application Number	(filed herewith)
Filing Date	August 6, 2001
First Named Inventor	Becker et al.
Group Art Unit	1763
Examiner Name	Goudreau

Attorney Docket Number 11762.0284.CNUS01

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	²
GG	C1	"Grown-Shaped Capacitor Cell for 1.5V. Operation 65 Mb DRAMS" (Toru Kage, et al.) IEEE Transactions on Electron Devices, vol. 38, No. 2. 1991.	
GG	C2	"VLSI Device Fabricator Using Unique, Highly-selective Si3N4 Dry Etching" (T. Kur et al.) Proceeding of the International Electron Devices Meeting (IEDM), 1983, pp. 757-759.	
	C3	"Formation of Contacts in a Planarized SiO2/Si3N4/SiO2 Dielectric Structure" (Paul E. Riley, Konrad K. Youn, and Charles C. Liu) J. Electrochem Soc. vol. 139, No 9 Sep. 1992.	
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	C6	"Self-Aligned Bitline Contact for 4 Mbit Dram", R.H. Kusters, H.M. Muehlhoff, G. Enders, E.G. Mohr, W. Mueller, pp. 640-649, 1987.	
	C7	"A Buried-Plate Trench Cell for a 64-Mb Dram", Kenney et al. 1992 Symposium of VLSI, IEEE.	
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	C9	"High-Rate and Highly Selective Etching of SiO2 Using Microwave Plasma", M. Nawata, Y. Kakehi, S. Kanai, Y. Kawasaki, K. Tsupokuni, and H. Enami, 183rd Meeting Electrochemical Society, Honolulu, Hawaii, pp. 228-234 (1993).	
	C10	"Influence of Reactant Transport on Fluorine RIE of Deep Trenches in Si", J.C. Arnold, D.B. Gray and H. H. Swain, J. Vac. Sci. Technol. B vol. 11, No. 6, pp. 2071-2080 (Nov. 1993).	
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Application Number	(filed herewith)
Filing Date	August 6, 2001
First Named Inventor	Becker et al.
Group Art Unit	1763
Examiner Name	George Goldreau

Attorney Docket Number

11762.0284.CNUS01

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
SGD	C12	"Mass Spectrometric Studies of Plasma Etching of Si ₃ N ₄ ", P.E. Clarke, D. Field, A.J. Hydes, D.F. Klemperer and M.J. Seakins, J. Vac. Sci. Technol. B vol. 3, No. 6, pp. 1614-1619, Nov. 1985.	
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	C14	"Radical Kinetics in a Fluorocarbon Etching Plasma," Y. Hikosaka and H. Sugai, Jpn. Appl. Phys., vol. 32, No. 6, pp. 3040-3044 (Jun. 1993).	
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	C17	"Time-Modulated ECR Plasma Discharge for Controlling Polymerization in SiO ₂ Etching," S. Samukawa, Jpn. J. Appl. Phys., vol. 32, Part 1, No. 12B, pp. 6080-6087 (Dec. 1993).	
	C18	"Suppression of Microloading Effect by Low-Temperature SiO ₂ Etching," M. Sato, D. Takerhara, K. Uda, K. Sakiyama and T. Hara, Jpn. J. Appl. Phys., vol. 31, No. 12B, pp. 4370-4375 (Dec. 1992).	
	C19	"Novel Surface Reaction Model in Dry-Etching A. Misaka, K. Harafuji, M. Kubota and N. Nomura, Process Simulator," Jpn. J. Appl. Phys., vol. 31, Pt. 1, No. 12B, pp. 4363-4369, (Dec. 1992).	
	C20	"Silicon Etching Mechanisms in a CF ₄ /H ₂ Glow Discharge," G.S. Oehrlein and H.L. Williams, J. Appl. Phys., vol. 62, No. 2, pp. 662-672 (Jul. 1987).	
	C21	"SiO ₂ Tapered Etching Employing Magnetron Discharge of Fluorocarbon Gas," T. Ohiwa, K. Honoka, T. Arikado, I. Hasegawa and H. Okano, Jpn. J. Appl. Phys., vol. 31, Pt. 1, No. 2A, pp. 405-410 (1992).	
SGD	C22	"Gas Mixing to Prevent Polymer Formation During Reactive Ion Etching", Bondur et al., IBM Tech. Disclosure Bulletin, vol. 21, No. 10, Mar. 1979, pp. 4016.	

Examiner Signature

George Goldreau

Date Considered

9-03

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Application Number (filed herewith)

Filing Date August 6, 2001

First Named Inventor Becker et al.

Group Art Unit

Examiner Name

Attorney Docket Number 11762.0284.CNUS01

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	C23	Plasma Cleaning by Use of Hollow-Cathode Discharge In A Trifluoromethane-Silicon Dioxide Dry Etching System, Watanabe, Feb. 1992, Japanese Journal of Applied Physics, Part 1, 31 (5A), pp. 1491-1498.	*
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	C25	Loewenstein, "Selective Etching of Silicon Nitride Using Remote Plasmas of CF ₄ and SF ₆ ", American Vacuum Society, 1989, vol. 7, No. 3, pp. 686-690.	
	C26	Yasuaki Nagahiro, "Self Aligned Contact Development Activity Increases Aimed for Large Scale Manufacturing Around 0.25 Mm Era Problem of Etching Technology: Improvement of Si ₃ N ₄ Selectivity Ratio", Nikkei Microdevices, Feb. 1995, pp. 54-61.	*
	C27	"Gas Mixing to Prevent Polymer Formation During Reactive Ion Etching", J.A. Bondur and C.F. Crimi, IBM Technical Disclosure Bulletin, vol. 21, No. 10, Mar. 1979.	
	C28	"Developments in Plasma Processing", R.A. Gottscho, AT&T Bell Labs, 1994 American Vacuum Society Symposium, p. 120.	*
	C29	"Self-Aligned Contact (SAC) Dry Etch Process of a 0.5u SRAM Technology", J.E. Nulty, P.S. Trammell, Cypress Semiconductor, 1994 American Vacuum Society Symposium, p. 120.	*
	C30		
	C31		
	C32		
	C33		

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George Gouldrean

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Atty. Docket No.: 11762.0284.CNUS01

Serial No.: 09/923,058

Applicants:

David S. Becker, et al.

Filing Date:

August 6, 2001

Group:

1763

List of Patents and Publications for Applicant's
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U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
G-09	A1	3,479,237	11/18/1969	Bergh, et al.	156	11	04/08/66
	A2	4,180,432	12/25/1979	Clark	156	643	12/19/77
	A3	4,241,165	12/23/1980	Hughes, et al.	430	269	09/05/78
	A4	4,244,752	01/13/1981	Henderson, et al.	148	1.5	03/06/79
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	A6	4,350,578	09/21/1982	Frieser, et al.	204	192 R	05/11/81
	A7	4,368,092	01/11/1983	Steinberg, et al.	156	345	08/05/81
	A8	4,374,698	02/22/1983	Sanders, et al.	156	643	07/09/81
	A9	4,377,438	03/22/1983	Moriya, et al.	156	643	09/22/81
	A10	4,401,054	08/30/1983	Matsuo, et al.	118	723	04/27/81
	A11	4,439,270	03/27/1984	Powell, et al.	156	644	08/08/83
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	A13	4,511,430	04/16/1985	Chen, et al.	156	643	01/30/84
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	A15	4,581,101	04/08/1986	Senoue, et al.	156	643	10/04/84
	A16	4,675,073	06/23/1987	Douglas, M.	156	643	03/07/86
	A17	4,711,698	12/08/1987	Douglas, M.	156	643	07/15/85
	A18	4,734,152	03/29/1988	Geis, et al.	156	646	07/13/87
	A19	4,734,157	03/29/1988	Carbaugh, et al.	156	643	03/18/87
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G-09	A22	4,807,016	02/21/1989	Douglas, M.	357	67	11/20/87

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George Goudrean

DATE CONSIDERED: 9-03

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Form PTO-1449 (modified)

Atty. Docket No.:
11762.0284.CNUS01Serial No.:
09/923,058

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Applicants:

David S. Becker, et al.

Filing Date:
August 6, 2001

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U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
Chhabra	A23	4,870,245	09/26/1989	Price, et al.	219	121.36	04/01/85
	A24	4,877,641	10/31/1989	Dory	427	38	05/31/88
	A25	4,892,753	01/09/1990	Wang, et al.	427	38	10/26/88
	A26	4,912,061	03/27/1990	Nasr	437	44	04/04/88
	A27	4,918,031	04/17/1990	Flamm, et al.	437	225	12/28/88
	A28	4,948,458	08/14/1990	Ogle, J.S.	156	643	08/14/89
	A29	4,971,655	11/20/1990	Stefano, et al.	156	659.1	12/26/89
	A30	4,978,420	12/18/1990	Bach	156	643	01/03/90
	A31	5,013,398	05/07/1991	Long, et al.	156	643	05/29/90
	A32	5,013,692	05/07/1991	Ide, et al.	437	241	12/05/89
	A33	5,021,121	06/04/1991	Groechel, et al.	156	643	02/16/90
	A34	5,040,046	08/13/1991	Chhabra, et al.	357	54	10/09/90
	A35	5,043,790	08/27/1991	Butler	357	68	04/05/90
	A36	5,091,326	02/25/1992	Haskell, J.D.	437	43	09/12/90
	A37	5,093,277	03/03/1992	Arima, et al.	437	69	03/02/90
	A38	5,242,538	09/07/1993	Hamrah, et al.	156	643	01/29/92
	A39	5,269,879	12/14/1993	Rhoades, et al.	156	643	10/16/91
	A40	5,286,344	02/15/1994	Blalock, et al.	156	657	06/15/92
	A41	5,286,667	02/15/1994	Lin, et al.	437	52	08/11/92
	A42	5,296,095	03/22/1994	Nabeshima, et al.	156	662	10/30/91
	A43	5,316,616	05/31/1994	Nakamura, et al.	156	643	05/27/93
Chhabra	A44	5,338,398	08/16/1994	Szwejkowski, et al.	156	655	12/23/92

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George Gaudreau DATE CONSIDERED: 9-031

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U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
OPAG	A45	5,364,804	11/15/1994	Ho, et al.	437	41	11/03/93
	A46	5,376,233	12/27/1994	Man	156	662	12/30/92
	A47	5,423,945	06/13/1995	Marks, et al.	156	662.1	09/08/92
	A48	5,429,710	07/04/1995	Akiba, et al.	216	17	02/16/94
	A49	5,451,290	09/19/1995	Salfelder	216	67	02/11/93
	A50	5,468,342	11/21/1995	Nulty, et al.	156	643.1	04/28/94
	A51	5,470,768	11/28/1995	Yanai, et al.	437	40	08/05/93
	A52	5,477,975	12/26/1995	Rice, et al.	216	68	10/15/93
	A53	5,503,901	04/02/1996	Sakai, et al.	428	161	06/29/94
	A54	5,556,501	09/17/1996	Collins, et al.	156	345	04/01/93
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Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	TRANSLATION PENDING
OPAG	B1	55009464	01/23/1980	Japan	H01L	26/08	Abstract Only
OPAG	B2	0 050 972 A2	05/05/1982	EPO	H01L	27/08	Yes

EXAMINER: George Gaudreau DATE CONSIDERED: 9-03-01

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Atty. Docket No.:
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List of Patents and Publications for Applicant's

Applicants:

David S. Becker, et al.

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Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country			
Only	B3	57210631	12/24/1982	Japan	REDACTED	2000	Abstract Only
	B4	60111474	06/17/1985	Japan	REDACTED	2000	Abstract Only
	B5	61-224423	10/06/1986	Japan	REDACTED	2000	Abstract Only
	B6	0 265 584 A2	05/04/1988	EPO	REDACTED	2000	Abstract Only
	B7	2 175 542 A	12/03/1986	United Kingdom	REDACTED	1992	Yes
	B8	01-15930	01/19/1989	Japan	REDACTED	2000	Abstract Only
	B9	2062038	03/01/1990	Japan	REDACTED	2000	Abstract Only
	B10	4-180222	06/26/1992	Japan	REDACTED	2000	Abstract Only
	B11	4-298032	10/21/1992	Japan	REDACTED	2000	Abstract Only
	B12	0 520 519 A1	12/30/1992	EPO	REDACTED	2000	Yes
	B13	0 552 490 A1	07/28/1993	EPO	REDACTED	2000	Yes
	B14	0 644 584 A1	03/22/1995	EPO	REDACTED	2000	Yes
	B15	0 651 434 A2	05/03/1995	EPO	REDACTED	2000	Yes
Only	B16	58-53833	03/30/1983	Japan	REDACTED	2000	Abstract Only

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
Only	C1	Watanabe, S., "Plasma Cleaning by Use of Hollow-Cathode Discharge in a CHF ₃ -SiO ₂ Dry-Etching System", <i>Japanese J. Appl. Physics</i> 1992, 31; 1491-1498.
	C2	Yasuaki Nagahiro, "Self-Aligned Contact Development Activity Increases Aimed for Large Scale Manufacturing Around 0.25 Mm Era Problem of Etching Technology: Improvement of Si ₃ N ₄ Selectivity Ratio", <i>Nikkei Microdevices</i> , Feb. 1995, pp. 54-61.
Only	C3	Gottsch, R.A., "Recent Developments in Plasma Processing", AT&T Bell Laboratories, 1994, <i>American Vacuum Society Symposium</i> , p. 120.

EXAMINER: George Goudreau DATE CONSIDERED: 9-031

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.

Form PTO-1449 (modified)

List of Patents and Publications for Applicant's

INFORMATION DISCLOSURE STATEMENT

JUN 10 2003 (Use several sheets if necessary)

U.S. Patent Documents
See Pages 1-3Foreign Patent Documents
See Pages 3-4

Atty. Docket No.: 11762.0284.CNUS01 | Serial No.: 09/923,058

Applicants:

David S. Becker, et al.

Filing Date: August 6, 2001

Group:

1763

Other Art
See Pages 4-8RECEIVED
JUN 12 2003
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Exam. Init.	Ref. Des.	Citation
OPG	C4	Nulty, J.E.; Trammel, P.S., "Self-Aligned Contact (SAC) Dry Etch Process of 0.5m SRAM Technology", <i>1994 American Vacuum Society Symposium</i> , p. 120.
OPG	C5	"The Correlation Between Selective Oxide Etching and Thermodynamic Prediction", S.C. McNevin, AT&T Bell Laboratories, <i>1994 American Vacuum Society Symposium</i> , p. 120.
OPG	C6	Horiike, Y.; Kubota K.; Fukazawa T., "High Rate and Highly Selective SiO ₂ Etching Employing Inductively Coupled Plasma", Tokyo University, <i>1994 American Vacuum Society Symposium</i> , p. 120.
OPG	C7	Yin, G.Z.; Ben-Dor, M.; Chang, M.S.; Yep, T.O. "High-Selectivity Plasma Etching of Silicon Dioxide on Single-Wafer Etchers", <i>Journal of Vacuum Science & Technology A</i> 1989, A7(3); 691-695.
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OPG	C10	Anonymous, "Selective Reactive Ion Etch for Silicon Oxide Over Silicon Nitride", <i>Research Disclosure</i> 1989, 301; 340.
OPG	C11	Móss, S.J., et al. Eds. "Plasma Etching", in <i>The Chemistry of the Semiconductor Industry</i> , New York: Blackie & Son Ltd., 1987, pp. 374-378.
OPG	C12	D'Agostino, R., "Summary Abstract: Mechanisms of Polymerization in Discharges of Fluorocarbons", <i>Journal of Vacuum Science and Technology A</i> 1985, 3 (6); 2627-2628.
OPG	C13	Riley, P.E.; Hanson, D.A., "Comparison of Etch Rates of Silicon Nitride, Silicon Dioxide, and Polycrystalline Silicon Upon O ₂ Dilution of CF ₄ Plasmas", <i>Journal of Vacuum Science and Technology B</i> 1989, 7(6); 1352-1356.
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George Gouldrean

DATE CONSIDERED:

9-03

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List of Patents and Publications for Applicant's

INFORMATION DISCLOSURE STATEMENT

JUN 10 2003

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U.S. Patent Documents
See Pages 1-3Foreign Patent Documents
See Pages 3-4Atty. Docket No.: 11762.0284.CNUS01
Serial No.: 09/923,058

Applicants:

David S. Becker, et al.

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Other Art
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O/P/GY	C16	Truesdale, B.A.; Smolinsky, G.; Mayer, T.M., "The Effect of Added Acetylene on the RF Discharge Chemistry of C ₂ F ₆ , A Mechanistic Model for Fluorocarbon Plasmas", <i>J. Applied Physics</i> 1980, 51(5); 2909-2913.
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EXAMINER: George Gaudreau

DATE CONSIDERED: 9-031

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INFORMATION DISCLOSURE STATEMENT — PTO-1449 (MODIFIED)

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Atty. Docket No.:
11762.0284.CNUS01Serial No.:
09/923,058

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INFORMATION DISCLOSURE STATEMENT
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Applicants:

David S. Becker, et al.

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	C25	Samukawa, S., "Time-Modulated ECR Plasma Discharge for Controlling Polymerization in SiO ₂ Etching", <i>Jpn. Journal of Applied Physics</i> , Vol. 32, part 1, no. 12B (December, 1993), pp. 6080-6087.
	C26	Sato, M.; Takehara, D.; Uda, K.; Sakiyama, K.; Hara, T., "Suppression of Microloading Effect by Low-Temperature SiO ₂ Etching", <i>Jpn. Journal of Applied Physics</i> , Vol. 31, no. 12B (December, 1992), pp. 4370-4375.
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	C28	Gottlieb, S.; Oehrlein, G.S.; Williams, H.L., "Silicon Etching Mechanisms in a CF ₄ /H ₂ Glow Discharge", <i>Journal of Applied Physics</i> , Vol. 62, no. 2 (July, 1987), pp. 662-672.
	C29	Ohiwa, T.; Horioka, K.; Arikado, T.; Hasegawa, I.; Okano, H., "SiO ₂ Tapered Etching Employing Magnetron Discharge of Fluorocarbon Gas", <i>Jpn. Journal of Applied Physics</i> , Vol. 31, Pt. 1, no. 2A (1992), pp. 405-410.
	C30	Bondur, et al., "Gas Mixing to Prevent Polymer Formation During Reactive Ion Etching", <i>IBM Technical Disclosure Bulletin</i> , Vol. 21, no. 10 (March, 1979), p. 4016.
	C31	Kaga, T., et al., "Crown-Shaped Capacitor Cell for 1.5 V Operation 65 Mb DRAM's", <i>IEEE Transactions on Electronic Devices</i> , Vol. 38, no. 2 (1991), pp. 225-261.
	C32	Kure, T., et al., "VLSI Device Fabrication Using Unique, Highly-Selective Si ₃ N ₄ Dry Etching", Proceedings of the International Electron Devices Meeting (IEDM), 1983, pp. 757-759.
	C33	Riley, P.E.; Young, K.K.; Liu, C.C., "Formation of Contacts in a Planarized SiO ₂ /Si ₃ N ₄ /SiO ₂ Dielectric Structure", <i>Journal of the Electrochemical Society</i> , Vol. 139, no. 9 (September, 1992), pp. 2613-2616.
	C34	Becker, D.S.; Bialock, G., "A Method of Obtaining a High Oxide to Nitride Selectivity in an MERIE Reactor", 1993 Symposium of the Dielectric Science and Technology and Electronics Divisions of the Electrochemical Society, Vol. 93-21 (May 19, 1993), pp. 178-189.
	C35	Armacost, M.; Marks, J.; C.I. Yang, "Selective Oxide: Nitride Dry Etching in a High Density Plasma Reactor", Symposium of Dielectric Science and Technology and Electronics Divisions of the Electrochemical Society, Vol. 93-21, (May 19, 1993), pp. 190-200.

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List of Patents and Publications for Applicant's

INFORMATION DISCLOSURE STATEMENT

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Atty. Docket No.: 11762.0284.CNUS01

Serial No.:

09/923,058

Applicants:

David S. Becker, et al.

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U.S. Patent Documents

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Exam. Init.	Ref. Des.	Citation
	C36	Kuesters, K.H.; Muekhoff, H.M.; Enders, G.; Mohr, E.G.; Mueller, W., "Self-Aligned Bitline Contact for 4-Mbit DRAM", Extended Abstracts, The Electrochemical Society, Vol. 87-1 (1987), pp. 640-649.
	C37	Kenney, et al., "A Buried-Plate Trench Cell for a 64-Mb DRAM", 1992 Symposium of VLSI, IEEE.
	C38	Kusters, K.H.; Enders, G.; Meyberg, W.; Benzinger, H.; Hasler, B.; Higelin, G.; Rohl, S.; Muhlhoff, H.M.; Muller, W., "A High Density 4 Mbit DRAM Process Using a Fully Overlapping Bitline Contact (FoBIC) Trench Cell", 1987 Symposium on VLSI Technology Digest of Technical Papers, pp. 93-94.
	C39	Nawata, M.; Kakehi, Y.; Kanai, S.; Kawasaki, Y.; Tsunokuni, K.; Enami, H., "High-Rate and Highly Selective Etching of SiO ₂ Using Microwave Plasma", 183 rd Meeting Electrochemical Society, Honolulu, Hawaii 1993, pp. 228-234.
	C40	Arnold, J.C.; Gray, D.C.; Swain, H.H., "Influence of Reactant Transport on Fluorine RIE of Deep Trenches in Si", Journal of Vacuum Science and Technology, B., Vol. 11, no. 6 (November, 1993), pp. 2071-2080.
	C41	Barklund, A.M.; Blom, H.O., "Influence of Different Etching Mechanisms on the Angular Dependence of Silicon Nitride Etching", Journal of Vacuum Science and Technology, A., Vol. 11, no. 4 (July 1993), pp. 1226-1229.
	C42	Loewenstein, "Temperature Dependence of Silicon Nitride Etching by Atomic Fluorine", Journal of Applied Physics, Vol. 65, no. 1 (1989), pp. 386-387.
	C43	Loewenstein, "Selective Etching of Silicon Nitride Using Remote Plasmas of CF ₄ and SF ₆ ", Journal Vac. Sci. Technology, Vol. 7, no. 3 (1989), pp. 686-690.
	C44	Bondur, J.A.; Crimi, C.F., "Gas Mixing to Prevent Polymer Formation During Reactive Ion Etching", IBM Technical Disclosure Bulletin, Vol. 21, no. 10 (March, 1979).
	C45	Complaint for Declaratory Relief, filed in Sandisk Corp. v. Micron Tech., Inc., Case No. C-02-2627VRW (N. D. Cal.).

EXAMINER:

George Goudrean

DATE CONSIDERED:

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INFORMATION DISCLOSURE STATEMENT — PTO-1449 (MODIFIED)

Form PTO-1449 (modified)		Atty. Docket No.: 11762.0284.CNUS01	Serial No.: 09/923,058
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicants: David S. Becker, et al.	
		Filing Date: August 6, 2001	Group: 1763
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
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Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
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Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
<i>gfg</i>	C1	Complaint for Declaratory Relief, filed in <i>Sandisk Corp. v. Micron Tech., Inc.</i> , Case. No. C-02-2627VRW (N. D. Cal.).
	C2	

EXAMINER: George Goudreau DATE CONSIDERED: 9-03/
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List of Patents and Publications for Applicant's

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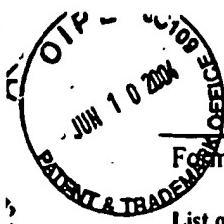
Atty. Docket No.
102-0072US-4
Serial No.
09/923,058Inventor/Applicant:
Becker, et al. / Micron Technology, Inc.Title: METHODS FOR ENHANCING SILICON
DIOXIDE TO SILICON NITRIDE
SELECTIVITY (as previously amended)Filing Date:
08/06/01
Group:
1763

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
OPRY	A1	3,479,237	11/18/1969	Bergh, et al.	156	11	04/08/66
	A2	4,180,432	12/25/1979	Clark	156	643	12/19/77
	A3	4,241,165	12/23/1980	Hughes, et al.	430	269	09/05/78
	A4	4,244,752	01/13/1981	Henderson, et al.	148	1.5	03/06/79
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	A7	4,350,578	09/21/82	Frieser, et al.	204	192 R	05/11/81
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	A12	4,377,438	03/22/1983	Moriya, et al.	156	643	09/22/81
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	A16	4,492,620	01/08/1985	Matsuo, et al.	204	192 R	09/09/83
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	A18	4,522,681	06/11/1985	Gorowitz, et al.	156	643	04/23/1984
	A19	4,568,410	02/04/1986	Thornquist	156	643	12/20/84
OPRY	A20	4,581,101	04/08/1986	Senoue, et al.	156	643	10/04/84

EXAMINER: George Goudy, Jr. DATE CONSIDERED: 8-04-1

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Atty. Docket No.
102-0072US-4Serial No.
09/923,058List of Patents and Publications for Applicant's
INFORMATION DISCLOSURE STATEMENTInventor/Applicant:
Becker, et al. / Micron Technology, Inc.Title: METHODS FOR ENHANCING SILICON
DIOXIDE TO SILICON NITRIDE
SELECTIVITY (as previously amended)

(Use several sheets if necessary)

Filing Date:
08/06/01Group:
1763

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
Ogden	A21	4,675,073	06/23/87	Douglas, M.	156	643	03/07/86
	A22	4,711,698	12/08/1987	Douglas, M.	156	643	07/15/85
	A23	4,734,152	03/29/1988	Geis, et al.	156	646	07/13/87
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	A28	4,870,245	09/26/1989	Price, et al.	219	121.36	04/01/85
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EXAMINER: George Goudyean DATE CONSIDERED: 8-041

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U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
0000	A43	5,091,326	02/25/1992	Haskell, J.D.	437	43	09/12/90
0000	A44	5,093,277	03/03/1992	Arima, et al.	437	69	03/02/90
	A45	5,176,790	01/05/1993	Arleo, et al.	156	643	09/25/1991
	A46	5,200,358	04/06/1993	Bollinger, et al.	437	180	11/15/1991
	A47	5,242,538	09/07/1993	Hamrah, et al.	156	643	01/29/92
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	A53	5,296,095	03/22/94	Nabeshima, et al.	156	662	10/30/91
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	A55	5,302,236	04/12/1994	Tahara, et al.	156	643	10/18/1991
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0000	A61	5,366,590	11/22/1994	Kadomura, S.	156	662	03/17/1994

EXAMINER: George Gould rear DATE CONSIDERED: 8-041

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Becker, et al. / Micron Technology, Inc.Title: METHODS FOR ENHANCING SILICON
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1763

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
Oggy	A62	5,372,969	12/13/1994	Moslehi, M. M.	437	195	03/03/1992
Oggy	A63	5,376,233	12/27/1994	Man	156	662	12/30/92
	A64	5,423,945	06/13/1995	Marks, et al.	156	662.1	09/08/92
	A65	5,429,710	07/04/1995	Akiba, et al.	216	17	02/16/94
	A66	5,451,290	09/19/1995	Salfelder	216	67	02/11/93
	A67	5,468,342	11/21/1995	Nulty, et al.	156	643.1	04/28/94
	A68	5,470,768	11/28/1995	Yanai, et al.	437	40	08/05/93
	A69	5,477,975	12/26/95	Rice, et al.	216	68	10/15/93
	A70	5,503,901	04/02/96	Sakai, et al.	428	161	06/29/94
	A71	5,556,501	09/17/96	Collins, et al.	156	345	04/04/93
	A72	5,562,801	10/08/96	Nulty, J.E.	156	643.1	12/07/94
	A73	5,772,832	06/30/1998	Collins, et al.	156	345	04/04/97
	A74	5,880,036	03/09/1999	Becker, et al.	438	740	11/15/93
	A75	5,880,037	03/09/99	Arleo, P.	438	740	10/09/97
	A76	5,888,414	03/30/1999	Collins, et al.	216	68	09/24/97
	A77	6,184,150	02/06/2001	Yang, et al.	438	740	10/27/97
	A78	6,194,325	02/27/2001	Yang, et al.	438	740	12/04/95
	A79	5,439,846	08/08/1995	Nguyen, et al.	437	187	12/17/93
	A80	5,731,242	03/24/1998	Parat, et al.	438	586	11/14/95
Oggy	A81	5,554,557	09/10/1996	Koh, Chao-Ming	437	52	02/02/96

EXAMINER: George Goudreau DATE CONSIDERED: 8-04-1

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Form PTO-1449 (modified)

Atty. Docket No. 102-0072US-4 Serial No. 09/923,058

List of Patents and Publications for Applicant's
INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

Inventor/Applicant:
Becker, et al. / Micron Technology, Inc.Title: METHODS FOR ENHANCING SILICON
DIOXIDE TO SILICON NITRIDE
SELECTIVITY (as previously amended)

Filing Date: 08/06/01 Group: 1763

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1	0 050 972 A2	05/05/1982	EPO	H01L	21/88	Yes ✓
	B2	0 265 584 A2	04/05/88	EPO	H01L	21/31	Yes ✓
	B3	0 520 519 A1	12/30/1992	EPO	H01J	37/32	Yes ✓
	B4	0 552 490 A1	07/28/1993	EPO	H01L	21/311	Yes ✓
	B5	0 644 584 A1	03/22/1995	EPO	H01L	21/311	Yes ✓
	B6	0 651 434 A2	05/03/1995	EPO	H01L	21/311	Yes ✓
	B7	01-015930	01/19/1989	Japan	H01L	21/302	Abstract Only ✓
	B8	2 175 542 A	12/03/1986	United Kingdom	C23F	1/02	Yes ✓
	B9	2-62038	03/01/90	Japan	H01L	21/302	Abstract Only ✓
	B10	JP60143633	07/29/1985	Japan	H01L	21/302	Abstract only ✓
	B11	4-298032	10/21/1992	Japan	H01L	21/302	Abstract Only ✓
	B12	55009464	01/23/80	Japan	H01L	27/08	Abstract Only ✓
	B13	57210631	12/24/82	Japan	H01L	21/302	Abstract Only ✓
	B14	58-53833	03/30/1983	Japan	H01L	21/302	Abstract Only ✓
	B15	60111474	06/17/1985	Japan	H01L	29/80	Abstract Only ✓
	B16	61-224423	10/06/1986	Japan	H01L	21/302	Abstract Only ✓
	B17	0 777 267	10/31/1996	EP	H01L	21/311	yes ✓
	B18	JP02198634	08/07/1990	Japan	B01J	23/24	Abstract only ✓
	B19	JP03262503	11/22/1991	Japan	B01D	19/00	Abstract only ✓
	B20	JP04180222	06/26/1992	Japan	H01L	21/302	Abstract only ✓
	B21	JP04298032	10/21/1992	Japan	H01L	21/302	Abstract only ✓
	B22	JP58053833	03/30/1983	Japan	H01L	21/302	Abstract only ✓

EXAMINER: George Gaudreau DATE CONSIDERED: 8-04-1

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Serial No. 09/923,058Inventor/Applicant:
Becker, et al. / Micron Technology, Inc.Title: METHODS FOR ENHANCING SILICON
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SELECTIVITY (as previously amended)Filing Date: 08/06/01
Group: 1763

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
Opry	C1	D. Kenney et al., "A Buried-Plate Trench Cell for a 64-Mb DRAM," 1992 Symposium of VLSI, IEEE, pp. 14-15 (1992). ✓
Opry	C2	K.H. Kusters et al., "A High Density 4Mbit DRAM Process Using a Fully Overlapping Bitline Contact (FoBIC) Trench Cell," Corporate Research and Technology, 1987 Symposium on VLSI Technology Digest of Technical Papers, pp. 93-94 (1987). ✓
Opry	C3	J.A. Bondur & C.F. Crimi, "Gas Mixing to Prevent Polymer Formation During Reactive Ion Etching," IBM Technical Disclosure Bulletin, Vol. 21, No. 10, pg. 4016 (Mar. 1979). ✓
Opry	C4	Bondur, J.A. & Schwartz, S.M., "Selective Reactive Ion Etching of Silicon Compounds," IBM Tech. Disclosure Bulletin, Vol. 21, No. 10, pg. 4015 (Mar. 1979). ✓
Opry	C5	M. Nawata et al., "High-Rate and Highly Selective Etching of SiO ₂ Using Microwave Plasma," 183rd Meeting Electrochemical Society, Honolulu, Hawaii, pp. 228-234 (1993). ✓
Opry	C6	A.M. Barklund & H.O. Blum, "Influence of Different Etching Mechanisms on the Angular Dependence of Si ₃ N ₄ Etching," J. Vac. Sci. Technol. A, Vol. 11, No. 4, pp. 1226-1229 (Jul. 1993). ✓
Opry	C7	J.C. Arnold et al., "Influence of Reactant Transport on Fluorine RIE of Deep Trenches in Si," J. Vac. Sci. Technol. B, Vol. 11, No. 6, pp. 2071-2080 (Nov. 1993). ✓
Opry	C8	P.E. Clarke et al., "Mass Spectrometric Studies of Plasma Etching of Si ₃ N ₄ ," J. Vac. Sci. Technol. B, Vol. 3, No. 6, pp. 1614-1619 (Nov. 1985). ✓
Opry	C9	T.J. Dalton et al., "Microtrench Formation in Polysilicon Plasma Etching Over Thin Gate Oxide," J. Electrochem. Soc., Vol. 140, No. 8, pp. 2395-2401 (Aug. 1993). ✓
Opry	C10	A. Mikasa et al., "Novel Surface Reaction Model in Dry-Etching Process Simulator," Jpn. J. Appl. Phys., Vol. 31, Pt. 1, No. 12B, pp. 4363-4369 (Dec. 1992). ✓
Opry	C11	Y.X. Li et al., "Plasma Etching of Polysilicon/Nitride/Polysilicon Sandwich Structure for Sensor Applications," Microelectron. Engrg., 21, pp. 341-344 (1993). ✓
Opry	C12	Y. Hikosaka & H. Sugai, "Radical Kinetics in a Fluorocarbon Etching Plasma," Jpn. Appl. Phys., Vol. 32, No. 6, pp. 3040-3044 (Jun. 1993). ✓
Opry	C13	J.L. Lindstrom et al., "Reactive Ion Etching of Silicon Nitride Deposited by Different Methods in CF ₄ /H ₂ Plasmas," J. Electrochem. Soc., Vol. 139, No. 1, pp. 317-320 (Jan. 1992). ✓
Opry	C14	K.H. Kusters et al., "Self-Aligned Bitline Contact for 4 Mbit DRAM," pp. 640-649, 1987 (journal/book unknown). ✓
Opry	C15	G.S. Oehrlein & H.L. Williams, "Silicon Etching Mechanisms in a CF ₄ /H ₂ Glow Discharge," J. Appl. Phys., Vol. 62, No. 2, pp. 662-672 (Jul. 1987). ✓
Opry	C16	S.C. McNevin, "The Correlation Between Selective Oxide Etching and Thermodynamic Prediction," AT&T Bell Laboratories, 1994 American Vacuum Society Symposium, p. 120. ✓

EXAMINER: George Goudreau DATE CONSIDERED: 8-041

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Becker, et al. / Micron Technology, Inc.Title: METHODS FOR ENHANCING SILICON
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SELECTIVITY (as previously amended)

Filing Date: 08/06/01 Group: 1763

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
gmg	C17	T. Kure et al., "VLSI Device Fabrication Using Unique, Highly-selective Si ₃ N ₄ Dry Etching," Proceeding of the International Electron Devices Meeting (IEDM), pp. 757-759 (1983). ✓
	C18	D.S. Becker & G. Blalock, "A method of obtaining a high oxide to nitride selectivity in an MERIE Reactor," 1993 Symposium of Dielectric Science and Technology and Electronics Divisions of The Electrochemical Society, Vol. 93-21, pp. 178-189 (May 19, 1993). ✓
	C19	Anonymous, "Selective Reactive Ion Etch for Silicon Oxide Over Silicon Nitride," Research Disclosure, No. 30159, pg. 340 (May 1989). ✓
	C20	H.T. Arends et al., "Mass Spectrometry and Reactive Ion Etching of Silicon Nitride (Si ₃ N ₄), Silicon Dioxide, and Silicon in Freon on Various Electrode Materials," in <i>Symposium Proceedings—International Symposium of Plasma Chemistry</i> , Vol. 3, 7 th Ed.(Eindrode publs.), pp. 1007-1012 (1985). ✓
	C21	M. Armacost et al., "Selective Oxide: Nitride Dry Etching in a High Density Plasma Reactor," Symposium of Dielectric Science and Technology and Electronics Divisions of the Electrochemical Society, Vol. 93-21, pp. 190-200 (May 19, 1993). ✓
	C22	A.J. Bariya et al., "The Etching of CHF _x Plasma Polymer in Fluorine-Containing Discharges," Journal of Vacuum Science and Technology B, Vol. 9, No. 1, pp. 1-7 (1991). ✓
	C23	E.Y. Chang et al., "A Selective Dry-Etch Technique for GaAs MESFET Gate Recessing," IEEE Trans. Electron. Devices, Vol. 35, No. 10, pp. 1580-84 (1988).
	C24	J. W. Coburn, "Increasing the Etch Ratio of SiO ₂ /Si in Fluorocarbon Plasma Etching", IBM Technical Disclosure Bulletin, Vol. 19, No. 10, pg. 3854 (1977).
	C25	J.W. Coburn & E. Kay, "Some Chemical Aspects of the Fluorocarbon Plasma Etching of Silicon and Its Compounds," IBM J. Res. Develop., Vol. 23, No. 1, pp. 33-41 (1979).
	C26	Complaint for Declaratory Relief, filed in <i>Sandisk Corp. v. Micron Tech., Inc.</i> , Case No. C-02-2627VRW (N. D. Cal. May 31, 2002).
	C27	R. D'Agostino, "Summary Abstract: Mechanisms of Polymerization in Discharges of Fluorocarbons," J. Vacuum Sci. & Tech., Vol. 3, No. 6, pp. 2627-28 (1985).
	C28	D.L. Flamm & V.M. Donnelly, "The Design of Plasma Etchants," Plasma Chemistry and Plasma Processing, Vol. 1, No. 4, pp. 317-63 (1981).
gmg	C29	H. Gilboa et al., "Nondestructive Characterization of RIE Induced Radiation Damage Using Surface Acoustic Waves," Mat. Res. Soc. Symp. Proc., Vol. 38, pp. 511-17 (1985).

EXAMINER: George Goodyear

DATE CONSIDERED: 8-041

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Atty. Docket No. 102-0072US-4	Serial No. 09/923,058
Inventor/Applicant: Becker, et al. / Micron Technology, Inc.	
Title: METHODS FOR ENHANCING SILICON DIOXIDE TO SILICON NITRIDE SELECTIVITY (as previously amended)	
Filing Date: 08/06/01	Group: 1763

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C30	G.S. Oehrlein & Y.H. Lee, "Reactive Ion Etching Related Si Surface Residues and Subsurface Damage: Their Relationship to Fundamental Etching Mechanisms," <i>J. Vacuum Sci. & Tech. A</i> , Vol. 5, No. 4, pp. 1585-94 (1987).
	C31	W.J. Grande et al., "Characterization of Etch Rate and Anisotropy in the Temperature-Controlled Chemically Assisted Ion Beam Etching of GaAs," <i>J. Vac. Sci. & Technol. B</i> , Vol. 8, No. 5, pp. 1075-79 (1990).
	C32	Y. Horiike et al., "High Rate and Highly Selective SiO ₂ Etching Employing Inductively Coupled Plasma and Discussion on Reaction Kinetics," <i>Journal Unknown</i> , pp. 801-809 (received Oct. 27, 1994; Accepted Mar. 17, 1995).
	C33	Kaga, T. et al., "Crown-Shaped Capacitor Cell for 1.5 V Operation 65 Mb DRAMs," <i>IEEE Transactions on Electronic Devices</i> , Vol. 38, No. 2, pp. 255-61 (1991).
	C34	K.H. Kusters et al., "A Self Aligned Contact Process with Improved Surface Planarization," <i>Journal de Physique</i> , Vol. 49, Colloque C4, Suppl. 9, C4503-06 (1988).
	C35	L.M. Loewenstein, "Selective Etching of Silicon Nitride Using Remote Plasmas of CF ₄ and SF ₆ ," <i>J. Vac. Sci. & Tech.</i> , Vol. 7, No. 3, pp. 686-90 (1989).
	C36	L.M. Loewenstein, "Temperature Dependence of Silicon Nitride Etching by Atomic Fluorine," <i>American Institute of Physics</i> , Vol. 65, No. 1, pp. 386-87 (1989).
	C37	K. Machida & H. Oikawa, "SiO ₂ Planarization Technology with Biasing and Electron Cyclotron Resonance Plasma Deposition for Submicron Interconnections," <i>J. Vacuum Sci. & Tech. B</i> , Vol. 4, pp. 818-21 (1986).
	C38	J. Marks et al., "Introduction of a New High Density Plasma Reactor Concept for High Aspect Ratio Oxide Etching," <i>SPIE</i> , Vol. 1803, pp. 235-47 (1992).
	C39	S.J. Moss et al., eds. "Plasma Etching", in <i>The Chemistry of the Semiconductor Industry</i> , New York, Blackie & Son Ltd., Ch. 15, pp. 343-90 (1987).
	C40	K. Nojiri et al., "Microwave Plasma Etching of Silicon Dioxide for Half-Micron ULSIs," in <i>Extended Abstracts of the 21st Conference on Solid State Devices and Materials</i> , pp. 153-56 (Tokyo 1989).
	C41	H. Norström et al., "RIE of SiO ₂ in Doped and Undoped Fluorocarbon Plasmas," <i>Vacuum</i> , Vol. 32, No. 12, pp. 737-45 (1982).

EXAMINER: George Goudreau | DATE CONSIDERED: 8-04-1

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Exam. Init.	Ref. Des.	Citation
Opx	C42	T. Ohiwa et al., "SiO ₂ Tapered Etching Employing Magnetron Discharge of Fluorocarbon Gas," Jpn. J. App. Physics., Vol. 31, Pt. 1, No. 2A, pp. 405-10 (1992).
Opx	C43	Preliminary Invalidity Contentions regarding Parent Patent 5,286,344, filed in Sandisk Corp. v. Micron Tech., Inc., Civ. No. CV02-2627CW (N. D. Cal. Dec. 6, 2002).
Opx	C44	Preliminary Invalidity Contentions regarding Parent Patent 6,015,760, filed in Sandisk Corp. v. Micron Tech., Inc., Civ. No. CV02-2627CW (N. D. Cal. Nov. 21, 2002).
Opx	C45	Preliminary Invalidity Contentions regarding Parent Patent 6,287,978, filed in Sandisk Corp. v. Micron Tech., Inc., Civ. No. CV02-2627CW (N. D. Cal. Dec. 6, 2002).
Opx	C46	P.E. Riley & D.A. Hanson, "Comparison of Etch Rates of Silicon Nitride, Silicon Dioxide, and Polycrystalline Silicon Upon O ₂ Dilution of CF ₄ Plasmas," J. Vacuum Sci. & Tech. B, Vol. 7, No. 6, pp. 1352-56 (1989).
Opx	C47	P.E. Riley et al., "Formation of Contacts in a Planarized SiO ₂ /Si ₃ N ₄ /SiO ₂ Dielectric Structure," J. Electrochemical Soc., Vol. 139, No. 9, pp. 2613-16 (Sept. 1992).
Opx	C48	T. Sakai et al., "Examination of Selective Etching and Etching Damage with Mass-Selected Ion Beam," 1993 Dry Process Symposium, pp. 193-198 (1993).
Opx	C49	S. Samukawa, "Time-Modulated Electron Cyclotron Resonance Plasma Discharge for Controlling Polymerization in SiO ₂ Etching," Jpn. J. Applied Phys., Vol. 32, Pt. 1, No. 12B, pp. 6080-87 (Dec. 1993).
Opx	C50	M. Sato et al., "Suppression of Microloading Effect by Low-Temperature SiO ₂ Etching," Jpn. J. Applied Phys., Vol. 31, No. 12B, pp. 4370-75 (Dec. 1992).
Opx	C51	J. P. Simko & G.S. Oehrlein, "Reactive Ion Etching of Silicon and Silicon Dioxide in CF ₄ Plasmas Containing H ₂ or C ₂ F ₄ Additives," J. Electrochem. Soc., Vol. 138, No. 9, pp. 2748-52 (1991).
Opx	C52	H. Toyoda et al., "Etching Characteristics of SiO ₂ in CHF ₃ Gas Plasma," J. Electronic Mat., Vol. 9, No. 3, pp. 569-84 (1980).
Opx	C53	E.A. Truesdale et al., "The Effect of Added Acetylene on the RF Discharge Chemistry of C ₂ F ₆ , A Mechanistic Model for Fluorocarbon Plasmas," J. Applied Physics, Vol. 51, No. 5, pp. 2909-13 (1980).

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Exam. Init.	Ref. Des.	Citation
	C54	J.L. Vossen & J.J. Cuomo, "Glow Discharge Sputter Deposition," in <i>Thin Film Processes</i> , J.L. Vossen & W. Kern, eds., Academic Press, New York, Ch. II-1, pp. 11-73 (1978).
	C55	S. Watanabe, "Plasma Cleaning by Use of Hollow-Cathode Discharge in a CHF ₃ -SiO ₂ Dry-Etching System," <i>Jpn. J. Appl. Physics</i> , Vol. 31, pp. 1491-98 (1992).
	C56	Y. Nagahiro, "Self Aligned Contact Development Activity Increases Aimed for Large Scale Manufacturing Around 0.25 Mm Era Problem of Etching Technology: Improvement of Si ₃ N ₄ Selectivity Ratio," <i>Nikkei Microdevices, LSI Update</i> , pp. 54-61 (Feb. 1995).
	C57	G.Z. Yin et al., "High-Selectivity Plasma Etching of Silicon Dioxide on Single-Wafer Etchers," <i>J. Vacuum Sc. & Tech. A</i> , Vol. 7, No. 3, pp. 691-95 (1989).
	C58	Anonymous, "New Insight into Oxide Etch Mechanisms-Substrate Heating Beneficial," <i>Semiconductor International</i> , pg. 88 (June 1997).
	C59	K. Harashima et al., "Selective Oxide Etching to Silicon Nitride," 1994 Dry Process Symposium, pp. 247-51 (Tokyo Nov. 10-11, 1994).
	C60	T. Ono et al., "Mechanism for CF Polymer Film Deposition through Deep SiO ₂ Holes in Electron Cyclotron Resonance Plasma," <i>Jpn. J. Appl. Phys.</i> , Vol. 35, pp. 2468-71 (Apr. 1996).
	C61	W. Tsai, "High Selectivity Plasma Etching of Silicon Dioxide with a Dual Frequency 27/2 MHz Capacitive Radio Frequency Discharge," <i>J. Vac. Sci. Technol. B</i> , Vol. 14, No. 5, pp. 3276-82 (Sep/Oct. 1996).
	C62	S. Sekiyama et al., "The Investigation for Introduction of SAC Etching Technique to Mass Productive DRAM Process," Oki Electric Industry Co. & Miyazaki Oki Electric Co., IEEE 0-7803-3752-2, pp. F-17 to F-20 (1997).
	C63	H. Hayashi et al., "Characterization of Highly Selective SiO ₂ /Si ₃ N ₄ Etching of High-Aspect Ratio Holes," <i>Jpn. J. Appl. Phys.</i> , Vol. 35, pp. 2488-93 (1996).
	C64	H. Kazumi et al., "Analysis of Plasma Chemical Reactions in Dry Etching of Silicon Dioxide," <i>Jpn. J. Appl. Phys.</i> , Vol. 34, Pt. 1, No. 4B, pp. 2125-31 (Apr. 1995).
	C65	M. A. Jaso et al., "Simultaneous BPSG Planarization and Contact Stud Formation in a .25 um DRAM Process," 1996 VMIC Conference, pp. 407-12 (Jun. 18-20, 1996).
	C66	Y. Ishigaki et al., "Low Parasitic Resistance Technologies with NES-SAC and SWT-CDV Process for Low Supply Voltage, High Speed BiCMOS SRAMS," 1994 Symposium on VLSI Technology Digest of Technical Papers, p. 99-100 (1994).

EXAMINER: *George Goudreau* DATE CONSIDERED: *8-04-1*

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Exam. Init.	Ref. Des.	Citation
	C67	J.H. Kim et al., "The Effects of CH ₃ F Addition to Carbon-rich Chemistry on Nitride Barrier SAC Etching for 1G DRAM and Beyond," 43 rd National AVS Symposium, pg. 133 (Oct. 14-18, 1996) (Abstract).
	C68	J. Gambino et al., "A Si ₃ N ₄ Etch Stop Process for Borderless Contacts in 0.25 um Devices," 1995 VMIC Conference, pp. 558-64 (Jun. 27-29, 1995).
	C69	M. Gallagher et al., "A Novel, Borderless Metal-to-Diffusion Contact Technique," 1995 IEEE/SEMI Advanced Semiconductor Manufacturing Conference, pp. 13-15 (Nov. 13-15, 1995).
	C70	A. Perera et al., "Scaling Self-aligned Contacts for .25 um and Below," Proceedings of SPIE: Microelectronic Device Technology, Vol. 3212, pp. 171-75 (Oct. 1-2, 1997).
	C71	Y. Chinzei et al., "SiO ₂ Etching Employing Inductively Coupled Plasma with Hot Inner Wall," Jpn. J. Appl. Phys., Vol. 35, Pt. I, No. 4B, pp. 2472-2476 (Apr. 1996).
	C72	J-H Kim et al., "Thin Nitride Barrier Self-Aligned Contact (TNBSAC) Oxide Etching in a High Density Inductively Coupled Plasma Using C ₄ F ₈ /CH ₃ F/Ar Chemistry," Electrochemical Society Proceedings, Vol. 98-4, pp. 137-45 (1998).
	C73	T. Akimoto et al., "Oxide Etching Using Surface Wave Coupled Plasma," Jpn. J. Appl. Phys., Vol. 33, pp. 7037-41 (Dec. 1994).
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EXAMINER: George Goudreau DATE CONSIDERED: 8-04-04

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Form PTO-1449 (modified)

Atty. Docket No.
102-0072US-4Serial No.
09/923,058

**List of Patents and Publications for Applicant's
INFORMATION DISCLOSURE STATEMENT**

OCT 14 2004
PATENT & TRADEMARK OFFICE
U.S. DEPARTMENT OF COMMERCE

(Use several sheets if necessary)

Inventor/Applicant:
Becker, et al. / Micron Technology, Inc.Title: METHODS FOR ENHANCING SILICON
DIOXIDE TO SILICON NITRIDE
SELECTIVITY (as previously amended)

Filing Date: 08/06/01 Group: 1763

U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
G	A82	3,653,898	4/4/72	Shaw	96	35	
	A83	3,904,454	9/9/75	Magdo et al.	156	11	
	A84	4,135,954	1/23/79	Chang et al.	148	187	
	A85	4,243,435	1/6/81	Barile et al.	148	1.5	
	A86	4,696,097	9/29/87	McLaughlin et al.	437	193	
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G	A99	6,171,974	1/9/01	Marks et al.	438	740	1/24/92

Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B	n/a					

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Form PTO-1449 (modified)	Atty. Docket No. 102-0072US-4	Serial No. 09/923,058
List of Patents and Publications for Applicant's		
INFORMATION DISCLOSURE STATEMENT		
(Use several sheets if necessary)		
Title: METHODS FOR ENHANCING SILICON DIOXIDE TO SILICON NITRIDE SELECTIVITY (as previously amended)		
Filing Date: 08/06/01	Group: 1763	

Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
*	C77	Various Japanese abstracts (untranslated) 8-p-P-14, 8-p-P-15, 8a-P-1
*	C78	Various Japanese abstracts (untranslated) 7-p-T-14, 7-p-T-15, 7-p-T-16
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Gao	C85	J.L. Yeh et al., "Reverse Pillar—A Self-Aligned and Self-Planarised Metallisation Scheme for Sub-Micron Technology," Vacuum: Technology, Applications & Ion Physics, Vol. 38, Nos. 8-10, pp. 817-821 (1988). ✓

* These references are not properly cited. They lack reference to the publication date, author, and the source of this material for each of the abstracts printed in Japanese. This information should be provided to the examiner in English on a 1449 form for review by the examiner.

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